

In the Claims

Applicant hereby submits amended claims, including a complete listing of all claims in the application with the status of each claim in parentheses.

## CLAIMS:

Claims 1-17 (Previously canceled)

18. (Previously presented) A reciprocating device comprising:

a piston-cylinder assembly having at least four pistons and one case, said case having at least one section, each of said pistons having an axis;

an oscillating intermediate shaft having a rotational axis, said shaft kinematically connected to said pistons;

a crankshaft kinematically connected to said intermediate shaft, said crankshaft having one crank and carrying an element transmitting rotation between said crankshaft and an adjacent device;

at least one primary transmission mechanism connecting said pistons and said intermediate shaft, each of said primary transmission mechanisms and the pistons connected to it being housed in one of said sections; and

a secondary transmission mechanism connecting said intermediate shaft and said crankshaft, said secondary transmission mechanism being housed in one of said sections.

5 19. (Currently amended) The device of Claim 18 [1], wherein the axes of said pistons are arranged in one plane, said plane being parallel to the axis of said intermediate shaft, each said piston axis having two pistons, said two pistons being connected by a general piston rod;

10 said primary transmission mechanism comprises a pinion secured on said intermediate shaft, and said general piston rod having a rack; and

said secondary transmission mechanism comprises a pinion secured on said intermediate shaft, a slide block having a rack, 15 and a connecting rod, said connecting rod being connected to said slide block on one end and to said crankshaft crank on another end.

20 20. (Currently amended) The device of Claim 19 [2], further comprising at least one additional piston, said additional piston connected to its own piston rod, said additional piston having an axis arranged on the same plane as the pistons connected by said general piston rod, each said additional piston having a primary transmission mechanism comprising a

pinion secured on said intermediate shaft and said piston rod having a rack.

21. (Currently amended) The device of claim 18 [1], wherein  
5 the axes of said pistons are arranged in two planes, said planes being parallel to the axis of said intermediate shaft, each said piston axis having two pistons, said two pistons being connected by a general piston rod;

said primary transmission mechanism comprises a pinion  
10 secured on said intermediate shaft and two said general piston rods, each rod having a rack; and

said secondary transmission mechanism comprises a pinion secured on said intermediate shaft, a slide block having a rack, and a connecting rod, said connecting rod being connected to  
15 said slide block on one end and to said crankshaft crank on another end.

22. (Currently amended) The device of Claim 21 [4], further comprising at least two additional pistons, said pistons  
20 connected to their own piston rods and having axes arranged on the same planes as the pistons connected by said general piston rods, each two said additional pistons having a primary transmission mechanism comprising a pinion secured on said

intermediate shaft and two said piston rods, each rod having a rack.

23. (Currently amended) The device of claim 18 [1], wherein

5 the axes of said pistons are arranged in two planes, said planes being parallel to the axis of said intermediate shaft, each said piston axis having two pistons, said two pistons being connected by a general piston rod;

said primary transmission mechanism comprises a double-armed  
10 lever secured on said intermediate shaft, two said general piston rods, and two shackles connecting said double-armed lever and each of said general piston rods; and

said secondary transmission mechanism comprises a single-armed lever secured on said intermediate shaft, and a connecting  
15 rod, said connecting rod being connected to said single-armed lever on one end and to said crankshaft crank on another end.

24. (Previously presented) A reciprocating piston device comprising:

20 a piston-cylinder assembly having at least four pistons and one case, said case having at least one section, each of said pistons having an axis;

an oscillating intermediate shaft having a rotational axis, said shaft kinematically connected to said pistons;

a crankshaft kinematically connected to said intermediate shaft, said crankshaft having one crank and carrying an element transmitting rotation between said crankshaft and an adjacent device;

5 at least one primary transmission mechanism connecting said pistons and said intermediate shaft, each of said primary transmission mechanisms and the pistons connected to it being housed in one of said sections; and

a secondary transmission mechanism connecting said  
10 intermediate shaft and said crankshaft, said secondary transmission mechanism being housed in one of said sections having a chamber, said chamber having an opening closed by a cover.

25. (Currently amended) The device of Claim 24 [7], wherein

15 the axes of said pistons are arranged in one plane, said plane being parallel to the axis of said intermediate shaft, each said piston axis having two pistons, said two pistons being connected by a general piston rod;

said primary transmission mechanism comprises a pinion  
20 secured on said intermediate shaft, and said general piston rod having a rack; and

said secondary transmission mechanism comprises a pinion secured on said intermediate shaft, a slide block having a rack, and a connecting rod, said connecting rod being connected to said slide block on one end and to said crankshaft crank on  
5 another end.

26. (Currently amended) The device of Claim 25 [8], further comprising at least one additional piston, said additional piston connected to its own piston rod and having an axis arranged on the same plane as the pistons connected by said  
10 general piston rod, each said additional piston having a primary transmission mechanism comprising a pinion secured on said intermediate shaft and said piston rod having a rack.

27. (Currently amended) The device of claim 24 [7], wherein  
15 the axes of said pistons are arranged in two planes, said planes being parallel to the axis of said intermediate shaft, each said piston axis having two pistons, said two pistons being connected by a general piston rod;

said primary transmission mechanism comprises a pinion  
20 secured on said intermediate shaft and two said general piston rods, each rod having a rack; and

said secondary transmission mechanism comprises a pinion secured on said intermediate shaft, a slide block having a rack,

and a connecting rod, said connecting rod being connected to said slide block on one end and to said crankshaft crank on another end.

5        28.        (Currently amended) The device of Claim 27 [10],  
further comprising at least two additional pistons, said pistons  
connected to their own piston rods and having axes arranged on  
the same planes as the pistons connected by said general piston  
rods, each two said additional pistons having a primary  
10        transmission mechanism comprising a pinion secured on said  
intermediate shaft and two said piston rods, each rod having a  
rack.

15        29.        (Currently amended) The device of claim 24 [7],  
wherein  
the axes of said pistons are arranged in two planes, said  
planes being parallel to the axis of said intermediate shaft,  
each said piston axis having two pistons, said two pistons being  
connected by a general piston rod;  
20        said primary transmission mechanism comprises a double-armed  
lever secured on said intermediate shaft, two general piston  
rods, and two shackles connecting said double-armed lever and  
each of said general piston rods; and

said secondary transmission mechanism comprises a single-armed lever secured on said intermediate shaft, and a connecting rod, said connecting rod being connected to said single-armed lever on one end and to said crankshaft crank on another end.

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30. (Previously submitted) A reciprocating piston device comprising:

a piston-cylinder assembly having at least six pistons, said pistons being arranged by groups each having six pistons including four principal and two auxiliary pistons, said assembly having at least one said group, each of said pistons having an axis, each said piston axis having two pistons connected by a general piston rod;

an oscillating intermediate shaft having a rotational axis, said shaft kinematically connected to said four principal pistons in each said group;

a crankshaft kinematically connected to said intermediate shaft, said crankshaft having one crank and carrying an element transmitting rotation between said crankshaft and an adjacent device;

at least one primary transmission mechanism connecting said principal pistons and said intermediate shaft;

a secondary transmission mechanism connecting said intermediate shaft and said crankshaft; and



a tertiary transmission mechanism connecting two of said principal pistons and two of said auxiliary pistons.

31. (Currently amended) The device of Claim 30 [13],

5 wherein

said primary transmission mechanism comprises a pinion secured on said intermediate shaft and two said general piston rods, each said rod having a rack;

10 said secondary transmission mechanism comprises a pinion secured on said intermediate shaft, a slide block having a rack, and a connecting rod, said connecting rod being connected to said slide block on one end and to said crankshaft crank on another end; and

15 said tertiary transmission mechanism comprises a pinion and two said general piston rods, each said rod having a rack.

32. (Previously submitted) A reciprocating piston device comprising:

20 a piston-cylinder assembly having at least four pistons, said pistons being arranged by groups each having two pistons, said assembly having at least two said groups, each of said pistons having an axis, each said piston axis having one piston;

an oscillating intermediate shaft having a rotational axis, said shaft kinematically connected to said pistons;

a crankshaft kinematically connected to said intermediate shaft, said crankshaft having one crank and carrying an element transmitting rotation between said crankshaft and an adjacent device;

5 at least one primary transmission mechanism connecting two of said pistons and said intermediate shaft, said primary transmission mechanism having a double-armed lever secured on said intermediate shaft and two links connecting each of said pistons and said double-armed lever; and

10 a secondary transmission mechanism connecting two of said pistons, said intermediate shaft and said crankshaft, said secondary transmission mechanism having a three-armed lever secured on said intermediate shaft, two links connecting each of said pistons and one arm of said three-armed lever, and a  
15 connecting rod, said rod connecting the third arm of said three-armed lever and said crankshaft crank.

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